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**From Pluripotency to Islets: miRNAs as Critical Regulators of Human Cellular Differentiation.**

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**Public Summary:**

MicroRNAs (miRNAs) actively regulate differentiation as pluripotent cells become cells of pancreatic endocrine lineage, including insulin-producing beta cells. The process is dynamic; some miRNAs help maintain pluripotency, while others drive cell fate decisions. Here, we survey the current literature and describe the biological role of selected miRNAs in maintenance of both mouse and human embryonic stem cell (ESC) pluripotency. Subsequently, we review the increasing evidence that miRNAs act at selected points in differentiation to regulate decisions about early cell fate (definitive endoderm and mesoderm), formation of pancreatic precursor cells, endocrine cell function, as well as epithelial to mesenchymal transition.

**Scientific Abstract:**

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